NSF's Community College Innovation Challenge

Participants' Guide

DESCRIPTION

Scientific progress is the hallmark of a dynamic society and the United States leads the world in scientific discoveries. An important aspect of scientific progress is the education of future scientists. Improvements in science, technology, engineering and mathematics (STEM) curricula, particularly changes that engage students in the process of research and discovery, have become a focal point for attracting more students into science. Undergraduate research is a significant strategy for improving undergraduate STEM education.

Community colleges prepare technicians who will become an integral part of research efforts and students who will continue their educations at four-year institutions. Further, they play a significant role in the preparation of underrepresented groups in science. Community colleges have long recognized the importance of mentoring students and have a history of success in educating underrepresented students for successful careers in STEM. Thus, community colleges play an important role in workforce development in their states and local communities. Industry frequently looks to community colleges to provide an educated and technologically up-to-date workforce. The National Science Foundation's thrust of incorporating research into the traditional teaching mission of the community college is a relatively new expansion of its mission. This challenge furthers NSF's mission by enabling students to discover and demonstrate their capacity to use science to make a difference in the world, and to transfer knowledge into action.

Who: Teams of three to five community college students, a faculty mentor, and a community or industry partner.

What: Teams proposing innovative STEM-based solutions for real-world problems they identify within one of the following themes:

Big Data
Infrastructure Security
Sustainability (including water, food, energy, environment)
Broadening Participation in STEM
Improving STEM Education

When: Sept. 15, 2014, to Jan. 15, 2015

Where: The challenge's online platform, www.nsf.gov/CCchallenge, where you can learn more about the challenge, access resources, register and submit your written entry and 90-second video.

Why: To foster the development of crucial innovation skills.

ELIGIBILITY CRITERIA

- All entries must be received during the competition submission window, from Sept. 15, 2014, to Jan. 15, 2015.
- Each team must have three to five student members, a faculty member who will function as a mentor to the team and a community/industry partner. If the team is chosen to participate in the Innovation Boot Camp, the mentor must accompany the team to the Boot Camp and the partner will be encouraged to attend.
- All student team members must be enrolled in a two-year, associate degree-granting institution in the U.S., its territories or its possessions at the time of entry (e.g., the fall 2014 semester or the spring 2015 semester).
- Student team members must be in good standing with their academic institution.
- Teams may consist of members from multiple institutions.
- Student team members are limited to participating in one team project for this challenge.
- Student and faculty mentor team members must be U.S. citizens, nationals or permanent residents.
- All team members must be at least 18 years of age by Jan. 15, 2015.
- A faculty member may serve as a mentor for one or more teams.
- Faculty mentors will be required to sign a certificate stating that the entry is original and has been independently developed by the student members of the team.

ENTRY GUIDELINES

A complete entry consists of two components, a written entry and a video entry, described below. Teams should review the entry form on the online platform for more details about the submission requirements and process.

Written Entry

The written entry will be submitted on the challenge platform in the three sections detailed below. Each section has a 1,600-character limit, including spaces.

- **The Problem.** Clearly and succinctly define the problem of interest. Provide relevant background information and identify the context of the problem (i.e., who is affected, how long has the problem existed). Indicate why it is important that this problem be solved, as well as the impact if the problem were to continue without intervention.
- **The Solution.** Describe your team's innovative solution. What science and/or technology underlie the solution? What challenges or barriers must be overcome to make the solution a reality?
- **Impacts and Benefits.** Describe how your team would measure the impact and benefits of your solution, if implemented. The benefits for science, industry, society, the economy, national security and/or other applicable areas must be addressed.

Video Entry

The video entry should consist of a single, 90-second video.

- The video should be used to clearly articulate the problem, what could happen if the problem is not resolved and your team's proposed solution. The video entry should have a unified voice, vitality and energy, and should emphasize new methods and insights not provided in the written entry to create a novel presentation while telling a compelling story. A successful entry will be visually striking and will be captured and edited to a high standard. The video entry should also deliver clear and understandable messages using non-technical language.
- Videos do not have to include credits, but if they do, these will be included in the 90-second time limit.
- Teams must upload video submissions to YouTube and provide a link to the video on the entry form. Teams advancing to the semifinal round will be required to submit their video file (an MOV file recorded in HD at a minimum resolution of 1280x720) via the online challenge platform to be displayed on the challenge website for public viewing.

THE PROCESS AND PRIZES

1. All entries will be screened for compliance with the rules.
2. Each entry will be evaluated anonymously based on the stated criteria and will be assigned a numerical score by each judge. Judges will score each of the four criteria on a 5-point scale. The four scores will then be combined for a total possible score of 20 points.

3. Up to 10 highest scoring entries in each of the five themes will become semifinalists (no more than 50 semifinalist teams total). If insufficient entries are received, NSF reserves the right to adjust the ratios of semifinalists. The semifinalists' videos will be posted on the competition website for public viewing.
4. A separate panel of judges will evaluate all semifinalist entries based on the same judging criteria used in the first round. Up to 10 highest scoring entries will selected for the final round (two per theme, unless insufficient entries are received). All finalist teams will receive feedback from the judges to help them improve their projects for the Innovation Boot Camp.
5. Finalist teams will be invited to attend a three day Innovation Boot Camp, a professional development workshop on innovation and entrepreneurship. The Innovation Boot Camp will provide professional development sessions on a variety of basic entrepreneurial skills relevant to innovation in both the private and public sectors. Sessions will include information applicable to commercializing ideas, using technology for social applications, communicating with stakeholders and creating a business strategy, among other topics. Some details about the Innovation Boot Camp are below – more detailed instructions will be provided to finalist teams:
    - Student and mentor team members will have all travel, room and board costs associated with attending the Innovation Boot Camp paid on their behalf. Community/industry partners are encouraged to attend the Boot Camp at their own expense.
    - Six weeks before attending the Innovation Boot Camp, finalists will receive detailed instructions on how to prepare for the camp. Mentors of finalist teams will receive $500 to distribute to the team to further develop their idea and to design a presentation for the final round of judging at the Boot Camp.
    - Teams will be encouraged to refine and improve upon their original entry over the course of the Boot Camp.
    - The final round of judging will consist of a five-minute, live presentation before a distinguished panel of judges at the end of the Boot Camp.
        - Teams will present their solutions and explain how they plan to move forward to accomplish their goals. Presentations should be informative and entertaining. Materials used for the presentation may include videos, computer programs, models, prototypes, graphics, displays, etc.
        - Cash prizes: each student member of the first-place team will receive $3,000, second-place student team members will receive $2,000 each, and third-place student team members will receive $1,000 each.

JUDGING ROUNDS

Preliminary Round: Jan. 29 – Feb. 19

Semifinal Round: March 5 – March 19

Final Round at Innovation Boot Camp: June 2015, exact dates to be determined

JUDGING CRITERIA

Judges will equally weigh the following criteria when scoring the entries:

1. **Innovation and impact.** An assessment of the proposed solution's use of science to address the problem, potential impact (potential to be transformative) and uniqueness (how the proposed solution differs from existing efforts in its use of novel concepts, methods and/or instrumentation).
2. **Scientific accuracy.** An assessment of the application of scientific laws and theory and an evaluation of the methods used to research the topic and test the proposed solution.
3. **Feasibility.** An assessment of the likelihood that the solution will work as presented based on relevant economic, political and social issues, etc. Evaluation of the team's recognition of potential barriers and suggestions for ways in which these barriers may be surmounted.
4. **Clarity of communication.** An assessment of the team's adherence to the entry guidelines (written and video entries), as well as grammar, structure, organization of the facts and data, etc. The entry should have a clear, consistent message.

SUMMARY OF RULES

- A contest entry constitutes an agreement to adhere to the rules and stipulations set forth by the contest sponsors.
- Any entrant or entry found in violation of any rule will be disqualified.
- Each team entrant certifies, through submission to the contest, that the entry is their own original creative work and does not violate or infringe the creative work of others, as protected under U.S. copyright law or patent law.

- By entering the contest, the entrants agree to hold harmless, NSF for all legal and administrative claims to include associated expenses that may arise from any claims related to their submission or its use.
- All judges' decisions are final and may not be appealed.
- Entrants retain all copyright and equivalent rights but give NSF nonexclusive rights to use their names, likenesses, quotes, submissions or any part of the submissions for educational publicity and/or promotional purposes. This includes, but is not limited to, website display, print materials and exhibits.
- NSF will not be responsible for any claims or complaints from third parties about any disputes of ownership regarding the ideas, solutions, images or video.
- Winners are responsible for all taxes or other fees connected with the prize received and/or travel paid for by the sponsoring organization.
- Employees, contractors, officers or judges of the sponsoring organizations are not eligible to enter the competition.
- If for any reason, including but not limited to an insufficient number of qualified entries is received, NSF reserves the right to modify or cancel the competition at any time during the duration of the competition.
- Should NSF decide to bring winning contestants to Washington, D.C., or to any other location for promotional and other purposes, expenses paid by NSF will be within the limits set forth in law according to federal travel regulations.
- All contestants agree that they, their heirs and estates shall hold harmless the United States, the employees of the federal government, and all employees of NSF for any and all injuries and/or claims arising from participation in this contest, to include that which may occur while traveling to or participating in contest activities.
- NSF has the final say on any point not outlined in the entry rules.